

CHAPTER 1 THE PROBLEM

1.1 Rationale

Modern Era of the 21st century is characterized by rapid development of information and communication technology (ICT). The application of ICT has been felt in almost all the benefits of community life in the world in general and in Indonesia in particular. One very important application of ICT in education is the e-Learning. Definition by LearnFrame.Com in Glossary of eLearning Terms [1], E-Learning is an education system that uses electronic applications to support teaching and learning with media Internet, computer networks, and standalone computers. E-learning can use Internet technology that can transmit data in the form of video, voice, image and text so that students and faculty members who separate the distance and time can interact with each other. Ideally, the technology can support e-learning for anyone interested in learning, which have time constraints, distance constraints and physical limitations. Indonesia with a demographic that consists of the islands are separated by a strait of the sea even in desperate need of course e-Learning technology, as very supportive of the deployment process of science. By using e-Learning technology, the learning process is not limited by place and time. If the e-Learning is well managed, and infrastructure areas in Indonesia are ready to implement e-Learning, then it is an open opportunity to be able to access from anywhere across Indonesia

e-Learning in Indonesia began to evolve in line with the development of ICT infrastructure. Here are some of the ICT infrastructure development program in Indonesia [2]:

- a. 1999-2000 *Jaringan Internet* (Jarnet)
- b. 2000-2001 *Jaringan Informasi Sekolah* (JIS)
- c. 2002-2003 *Wide Area Network Kota* (WAN Kota)
- d. 2004-2005 Information and Communication Technology Center (ICT Center)
- e. 2006-2007 Indonesia Higher Education Network (Inherent)
- f. 2007- now *Jejaring Pendidikan Nasional* (Jardiknas)
- g. 2008- now Southeast Asian Education Network (SEA EduNet)

Along with the development of ICT infrastructure is an institution of higher education in Indonesia began to develop e-Learning is used in the lecture. Some colleges use e-Learning platforms such as Moodle open source, for example Gunadarma university (<http://elearning.gunadarma.ac.id/>), Bandung Institute of Technology (<http://kuliah.itb.ac.id/>), Parahyangan University (<https://elearning.unpar.ac.id/>), University of Indonesia (<http://scele.ui.ac.id/>) and many others. While other colleges develop their own e-Learning platform, for example; Bina Nusantara University (<http://online.binus.ac.id/>), Gadjah Mada University (<http://elisa.ugm.ac.id/>), Open University (<http://www.ut.ac.id/>), University Computer Indonesia (<http://kuliahonline.unikom.ac.id/>) and many others.

Although the development of e-Learning in higher education in Indonesia has been so rapid, and experience an improvement process, there are no tools that can evaluate the process of improvement, whereas the improvement process needs a measurement system.

e-Learning in the world, particularly in New Zealand has made progress earlier than in Indonesia, and there has been a tool that can evaluate e-Learning is referred to as e-Learning Maturity Model (eMM) [3]. eMM is a quality development Model That Is useful for an institution to assess the ability of developing, implementing and supporting e-learning. What is meant by the ability of the models in the context of eMM is the institution's ability to Ensure that the design, development and installation of e-Learning is in conformity with the needs of students, faculty, staff and institutions.

In order to improve the quality of e-Learning application in Indonesia, needed a device to held a measurement system. Measurement system is an important tools to help an improvement process. There is a measure of e-Learning from New Zealand, the eMM (e-Learning Maturity Model) that can be adapted. However, this needs to be adapted so that eMM could be applied in Indonesia, because eMM is generated from research in developed countries, which of course has the infrastructure readiness and preparedness culture is superior to Indonesia.

A Model result of this adaptation is the initiation step in Indonesia, so it must have the possibility of sustainable development. The purpose of this initiation is also to introduce e-Learning community in Indonesia to the world of e-Learning community, as well as to familiarize Indonesia e-Learning with the attributes associated with the implementation of e-Learning and the most important is to have a measurement system that can be used to hold a continuous improvement.

1.2 Theoretical Framework

This research intends to produce new products result from the Adaptation of existing products, the eMM (e-Learning Maturity Model) that can be applied to measure the maturity and capability of e-learning process in Indonesia to have a continuous improvement process. The process of adaptation of the original eMM (from New Zealand) to adapted eMM using several factors, factor system builders (people, process, product), the dimensions to be aware of when to bring up and develop e-learning at an institution and of course the cultural differences between Indonesia and New Zealand which will be a filter to do the adaptation. This is so that the measurement of e-Learning in higher education in Indonesia by using eMM is possible.

eMM uses a framework of thinking CMM (Capability Maturity Model) to determine the area to be assessed and SPICE (Software Process Improvement and Capability Determination) to be used as a management process and guidelines for assessing / improving the processes considered earlier.

1.3 Conceptual Framework/Paradigm

This sub chapter will discuss research variables and the relationship with the conceptual research.

At least there are 6 (six) research variables applied in this study namely:

Table 1-1-1 Research Variables

No	Relationship with Conceptual Research	Variable
1	the category of areas to be assessed using the EMM	Proses Area
2	Derivative processes that are in a process area	Process
3	Assessment point of view for each process	Dimension
4	Defining each dimension for each process	Practice Statements
5	Maturity level of an application / organization that is measured	Maturity Level
6	Factors that influence the Adaptation eMM for Higher Education in Indonesia	Education regulation, Indonesia e-readiness, 3P, Dimension of organization, infrastructure, Resource of funds and Human Resources.

1.4 Statement of the Problem

The main problem to be solved in this study are:

1. What are the factors that can affect the process of eMM Adaptation becomes an appropriate eMM to be implemented in Indonesia higher education?
2. How to adapt the e-Learning Maturity Model (EMM) from New Zealand so it is suitable for use as a measure of the maturity of e-learning in Indonesia, particularly in higher education?
3. How the results of measurements of e-Learning in higher education in Indonesia when compared with the results of measurements of e-Learning in New Zealand?

1.5 Hypothesis

The hypothesis of this study are:

1. There are several factors that affect the eMM Adaptation for Indonesia.
2. It will produce an e-Learning Maturity Model which is suitable for use in measuring the processes associated with the implementation of e-Learning in higher education in Indonesia for continuously improving e-Learning.
3. e-Learning Maturity Model will be modified to measure the level of maturity and yield improvement of the process of implementing the proposed e-Learning in higher education in Indonesia.

1.6 Assumption

The assumptions of this study are:

1. There is not a measuring tool used to measure the process of implementing e-learning in Indonesia which has a 5 (five) process area and assessed within 5 (five) dimensions.
2. There are currently no special tools used to assess the implementation of e-learning in Indonesia.

1.7 Scope and Delimitation

The scopes and delimitations of this study are:

1. E-Learning study sites are the University of Bina Nusantara and Gunadarma University, Jakarta.

2. The data used are derived from student and faculty users of e-Learning at the study sites as well as from direct observations.
3. The study produced a picture of the implementation of e-learning at the two universities in Indonesia, but can not be summed up as an overall picture of e-learning in Indonesia.

1.8 Importance of the Study

The importance of this study is that higher education institutions in Indonesia will be able to know the extent of implementation of e-Learning in their institution had been applied when compared with the standards and processes are defined by eMM. Most importantly, this study will be the beginning to have a measurement system and initiate research on the measurement system which is useful for the continuous improvement process for e-Learning in Indonesia. The result of this research is measurement system which is the initial result, which can be continuously improved.

1.9 Definition of Terms

Terms used in this thesis are as follows:

eMM	:	e-Learning Maturity Model
Binus	:	Bina Nusantara University
UG	:	Gunadarma University
SPICE	:	Software Process Improvement and Capability Determination
CMM	:	Capability Maturity Model
ICT	:	Information and Communication Technology